



**TN\_210\_ENG\_210\_3 - TN-210-3 - ENG - HYDROLOGY - RAINFALL-FREQUENCY AND DESIGN RAINFALL DISTRIBUTIONS FOR SELECTED PACIFIC ISLANDS**

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## **TN-210-3 - ENG - HYDROLOGY - RAINFALL-FREQUENCY AND DESIGN RAINFALL DISTRIBUTIONS FOR SELECTED PACIFIC ISLANDS**

**Engineering Hydrology  
Technical Note No.: 210-3**

**Date:** October 7, 2008

**Subject:** ENG - HYDROLOGY - RAINFALL-FREQUENCY AND DESIGN  
RAINFALL DISTRIBUTIONS FOR SELECTED PACIFIC ISLANDS

**Purpose.** To distribute information regarding rainfall-frequency and design rainfall distributions for selected Pacific Islands.

**Effective Date.** Effective upon receipt.

**Background.** This technical note addresses rainfall-frequency and design rainfall distributions for the Territory of Guam, the Commonwealth of the Northern Mariana Islands, the Republic of Palau, the Republic of the Marshall Islands, Wake Island, the Federated States of Micronesia, and the Territory of American Samoa. Historic rainfall data measured on the islands were compiled, screened, and analyzed to provide estimates of 1-year through 500-year return periods of rainfall at durations of 15-minutes, 30-minutes, 1-hour, 3-hours, 6-hours, 12-hours, 24-hours, 48-hours, and 72-hours. The rainfall estimates for durations from 15-minutes to 24-hours were then used to develop 24-hour design rainfall distributions. The information provided is used in the design of conservation engineering practices and analysis of potential flooding problems. Rainfall amount and rainfall distribution represent essential inputs to Natural Resources Conservation Service (NRCS) hydrology software applications, Engineering Field Handbook Chapter 2, WinTR-55, and WinTR-20.

**Explanation.** While studies of limited scope for some of the islands have been completed by local and Federal agencies in the past; no comprehensive study of rainfall-frequency has previously been completed for this entire group of islands. NRCS relies on the National Oceanic and Atmospheric Administration, National Weather Service (NWS) to complete rainfall-frequency analyses. NWS plans to complete a study of these islands at a future date. The results in this technical note are appropriate for interim use until the NWS report is published.

For questions related directly to rainfall-frequency and design rainfall distributions for these selected Pacific Islands, contact the Water Quality and Quantity Technology Development Team, West National Technology Support Center, at (301) 504-3956.

**Distribution.** This directive is available on the NRCS Electronic Directives System Web site at <http://directives.sc.egov.usda.gov/1788.wba>.

**Filing Instructions.** Due to printing and distribution costs, the availability of this information is limited to electronic format. If a paper copy is retained, file it adjacent to other engineering directives.

**Contact.** For information related to this technical note, contact the National Hydraulic Engineer at (202) 720-0772, or by writing to the Conservation Engineering Division, Post Office Box 2890, Washington, D.C. 20013.

**/s/**

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Deputy Chief for Science and Technology

Attachment

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